

*ASSESSMENT-BASED INTERVENTION FOR
SEVERE BEHAVIOR PROBLEMS IN
A NATURAL FAMILY CONTEXT*

BOBBIE J. VAUGHN, SHELLEY CLARKE, AND GLEN DUNLAP

UNIVERSITY OF SOUTH FLORIDA

Functional assessments and assessment-based interventions were conducted with a boy with disabilities and severe problem behavior in the context of two family routines: using the bathroom in the family home and dining in a fast-food restaurant. A multiple baseline design demonstrated the effectiveness of the intervention package as implemented by the boy's mother in the two routines. The results provide a systematic replication and extension of behavior-analytic interventions in natural family contexts.

DESCRIPTORS: family support, problem behaviors, functional assessment, assessment-based intervention

Many of the responsibilities of family life include conducting typical family routines in the home and community; however, these routines can be very difficult for families that include children with disabilities and severe problem behavior. Recently, behavior-analytic research has produced encouraging findings through its development and evaluation of assessment-based and contextually appropriate interventions in school and community environments (Carr & Carlson, 1993; Dunlap, Kern-Dunlap, Clarke, & Robbins, 1991). Such studies have used interview and observational data to develop multicomponent interventions for resolving serious behavioral challenges. Still, despite its crucial

importance for the external validity of behavior-analytic procedures, the application of assessment-based interventions by typical care providers (e.g., parents) in naturally occurring situations (e.g., family routines) has received little attention in the research literature (Lucyshyn, Albin, & Nixon, 1997). Therefore, this controlled case study was conducted with the purpose of systematically replicating and extending the literature on assessment-based intervention in typical family contexts.

METHOD

Andrew was an 8-year-old boy with severe disabilities including agenesis of the corpus callosum. He and his mother participated in this study. Although Andrew could speak, his communication was supported by augmentative pictures and objects or was conveyed through gestures or problem behaviors. Andrew's mother was a homemaker in her early 30s who attended a community college on a part-time basis.

The study was conducted in two contexts that were selected by Andrew's mother because they involved typical routines that were associated with significant behavior problems. The first context was the bathroom in the

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Reprint requests may be sent to Glen Dunlap, Division of Applied Research and Educational Support, Department of Child and Family Studies, Louis de la Parte Florida Mental Health Institute, University of South Florida, 13301 Bruce B. Downs Blvd., Tampa, Florida 33612.

home: Andrew was expected to follow his mother's request and move from a living area to the bathroom, turn on the light, urinate in the toilet, flush, turn off the light, and exit the bathroom. The second context was a fast-food restaurant: Andrew was expected to exit the car with his mother and sister, enter the restaurant, sit and wait with his sister while his mother ordered the food at the counter, eat the food, and then leave the restaurant.

Sessions were held two times per week and were defined by predetermined initiation and termination points that were held constant throughout the study. All sessions were videotaped using a hand-held camcorder and scored in continuous 10-s intervals. Dependent variables included disruptive behavior and engagement. *Disruptive behavior* consisted of aggression, property destruction, whining, collapsing on the floor, and attempting to run away, and was scored if any instance occurred within an interval. *Engagement* was defined as following the natural sequence of the routine or specific task instructions and was scored if Andrew was on task for at least 70% of the interval, as determined by observer judgment. It was possible for both dependent variables to be scored within a single interval. In addition, Andrew's task performance on each step of the routines was scored from the videotapes on a 3-point scale that included *nonperformance* (1), *performed with assistance* (2), and *performed independently* (3). Interobserver agreement was determined for 48% of sessions. Agreement averaged 93% (range, 59% to 100%) for occurrences of disruptive behavior and 95% (range, 50% to 100%) for intervals with engagement. Agreement on the task routines was 100% for the bathroom and 98% for the restaurant.

The independent variable in this study was the process of intervention development, which began with a functional assessment (O'Neill *et al.*, 1997) that included a detailed interview with Andrew's mother and several

observations by the first two authors in the two routines. The assessment data led to the development of hypotheses regarding the occurrence of disruptions in the two routines. Disruptions during toileting appeared to occur because the routine required transition to a relatively unreinforcing activity, and Andrew seemed to have difficulty following the sequence independently. In response, the intervention involved a visual portrayal (schedule) of the activity sequence that included a picture of a preferred toy that was delivered following successful completion of the toileting routine. Similarly, disruptions during the restaurant routine were hypothesized to be a function of inadequate reinforcement during the periods of waiting (e.g., ordering) and an inability to participate. The intervention included an adapted menu to facilitate Andrew's participation in ordering, active encouragement of Andrew's involvement in paying for food and securing soft drinks, and a photograph of a preferred toy (reward) that was provided during the car ride home. Thus, although the routines differed along many dimensions, both hypothesis-based intervention packages were comprised of supplementary rewards and visual schedules to facilitate participatory engagement, implemented in a multiple baseline across settings.

Andrew's mother implemented all of the interventions during the sessions, with one of the authors providing suggestions and encouragement during the first few intervention sessions. All subsequent sessions, including all of the weekly follow-up sessions, were conducted independently by Andrew's mother. A probe session was conducted during follow-up for the restaurant routine. In this session, Andrew's father was present and a restaurant was selected in which ordering was issued to a server (rather than ordering at a counter). To expedite the waiting period, Andrew was provided with drawing materials (a common practice in many family restaurants). All other procedures were the same.

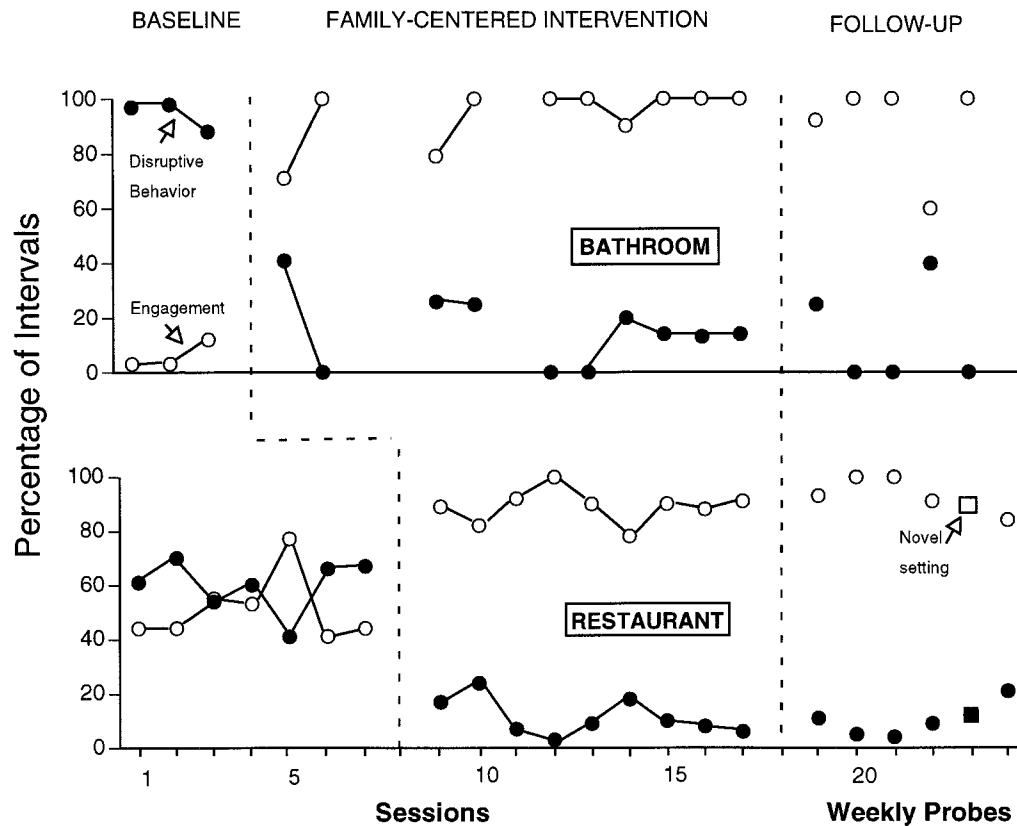


Figure 1. Percentage of intervals with disruptive behavior and engagement across the bathroom and restaurant routines. Connected data points represent sessions that occurred approximately two times per week. Disconnected points span a period of at least 1 week. The square data points during follow-up in the restaurant routine depict a probe session that was conducted in a different restaurant environment.

RESULTS AND DISCUSSION

Figure 1 depicts a clear demonstration of the effectiveness of assessment-based intervention packages. The interventions produced rapid and durable reductions in disruptive behavior and corresponding increases in engagement. The one-session probe (the square data points) in the family restaurant also yielded desirable behavior. In terms of Andrew's task performances, scores for the bathroom routine averaged 1.77 during baseline and increased to scores of 2.8 in both intervention and follow-up; the restaurant routine yielded average scores of 2.5 in baseline, 2.9 in intervention, and 3.0 in follow-up.

These results contribute to an emerging literature on assessment-based behavioral intervention in typical settings and routines. In recent years, there have been a number of empirical demonstrations of a functional assessment process that leads to multicomponent interventions in schools and community environments (e.g., Carr & Carlson, 1993; Dunlap et al., 1991); however, there have been very few such investigations in family contexts, despite the fact that family routines are arguably the most common and most influential interactions for children with disabilities. The present study contributes a controlled case study with a mother implementing all of the procedures in circumstances that the family identified as the most problematic.

It is important to note that the contexts included a private routine in the home (the bathroom) as well as a routine in a highly public setting (the fast-food restaurant). In both settings, problem behavior decreased while engagement and independent task completion increased.

It is important to acknowledge that the study is limited by having only one participating family and only two routines. Further, despite the presence of several weeks of follow-up data, the scope of the investigation was inadequate to claim the important benefit of long-lasting lifestyle change. Nevertheless, when combined with the accumulating base of information on assessment-based family support (Lucyshyn *et al.*, 1997), the present data can be viewed as adding encouraging testimony to the efficacy and feasibility of functional, assessment-based, and contextually appropriate interventions.

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